

*Sagittaria variabilis* mihi  
= *S. sagittifolia* americanus  
21<sup>st</sup> - 23<sup>rd</sup> June 1847. Santa Fe,  
shallow ponds.

17<sup>th</sup> July, in fruit.

*Sag. H.*

2<sup>nd</sup> September 1847. Shallow pond-  
like collections of water in the  
prairies, 40 miles West of the  
Ford of Arkansas Riv.

### Orobanchaceæ

30<sup>th</sup> March 1847. Santa Fe. A shrub  
(the highest from 10 to 15 feet) very  
common all around Santa Fe.  
Lower regions of the mountains,  
but more abundantly on the dry  
grassy hills South West of Santa  
Fe, and on the plains adjoining  
them. They are found also on  
the summits of high mountains  
but far less abundantly.  
The branchlets of this shrub dry  
much quicker than those of  
the next following number.

30<sup>th</sup> April 1847. Santa Fe, mount-  
ain-valleys, in the neighbourhood  
of creeks. A shrub commonly  
of 12 to 15 feet high; some of its  
lowermost branches (near the ground)  
often  $\frac{1}{2}$  foot in diameter.  
A tree-like shrub of this kind  
I saw near the Creek, whose main  
trunk measured 8 feet in cir-  
cumference; the branchless lower  
most branches very much spread-  
ing and growing to a height  
of about 25 feet.

3<sup>rd</sup> June 1847. in flower. Santa  
Fe, Creek valley, in shady pla-  
ces at no great distance from the  
creek. Low shrubs from 1 to  
2 $\frac{1}{2}$  feet high, branches very  
tough.

### Naiadaceæ.

21<sup>st</sup> June - 17<sup>th</sup> July 1847.  
Vicinity of Santa Fe, at the  
margin of ponds, submerged,  
leaves floating on the surface.

### Arismaceæ.

*Arisma* Plantago. fruct. minute  
fol. cordata = *A. parviflora* ?  
17<sup>th</sup> August 1846. About 25 miles  
East of Council-Grove, marshy  
ground, Creek bed.

14<sup>th</sup> August. 27<sup>th</sup> September 1846.  
Low prairies 9 miles South  
of Fort Leavenworth; also about  
100° West longitude, not far from  
the bed of the Arkansas Riv.  
Flowers white.

### Iridaceæ

22<sup>nd</sup> June - 7<sup>th</sup> July 1847. Santa  
Fe, low grassy places near  
irrigating ditches.

### Smilacaceæ.

*Asparagus officinalis*

18<sup>th</sup> June 1847. Santa Fe  
cultivated.

17<sup>th</sup> June 1847. Santa Fe Creek  
valley; overshaded bank of the  
creek.

3<sup>rd</sup> - 10<sup>th</sup> June 1847. Santa Fe,  
shady bank of the creek, fertile  
soil.

3<sup>rd</sup> - 24<sup>th</sup> June 1847. Santa Fe,  
foot of mountains, shady  
places, northern declivities.

### Liliaceæ.

8<sup>th</sup> July 1847. Santa Fe, foot  
of mountains, creek-valley.

8<sup>th</sup> June 1<sup>st</sup> October 1846 - 1. Santa Fe to Rock Creek, also between Raton and Bormejo Creek (betw. Bent's Fort and Santa Fe), near creeks, and on level prairies, also foot of mount aires.

3<sup>rd</sup> June 1847. in flower. Santa Fe, sunny steep declivities of mountains, between rocks, over green. The rhizomas of this plant which sometimes are to be found of 3 inches diameter, are used by the Mexicans as a substitute for soap. For this purpose they are mashed into pieces with a stone, hot water poured on to them, and the clothes rubbed with them. In drying the leaves I found that from their bases where they had been cut, some drops of a clear transparent exudance, which was sticky at the glue, but had no smell, was exuding. Some of the leaves over 3 feet long.

24<sup>th</sup> May - 21<sup>st</sup> August in flower. Santa Fe to Rock Creek, at the foot of mountains, on dry declivities, around shrubs. Also on dry soil hills about Santa Fe Bent's Fort, but more abundantly in the valleys between these hills. The rhizomas of this plant are likewise used as a substitute for soap. This plant does not seem to flower every year.

17<sup>th</sup> August 1847. 2 miles east of Moro River. Elevated rocky region. Pontederiaceae.

40 miles South West of the Ford of Arkansas River. Flowers of a fine blue colour.

Melanthiaceae.

Melanthia virginicum

11<sup>th</sup> August 1846. 8 miles South of Fort Leavenworth, high prairies.

28<sup>th</sup> July 1847. Santa Fe <sup>Creek</sup> 12 miles up the above Santa Fe, foot of mountains.

Succaceae, Cyperaceae.

Gramineae.

6<sup>th</sup> June - 26<sup>th</sup> July 1847. Santa Fe, wet grassy places of the creek-bottom.

20<sup>th</sup> May - 17<sup>th</sup> August 1847. Santa Fe and Rio Moro, elevated rocky regions not far from the water.

9<sup>th</sup> June - 12<sup>th</sup> July 1847. Santa Fe Creek, margin of the water.

16<sup>th</sup> June - 28<sup>th</sup> July 1847. Santa Fe Creek, margin of the water.

3<sup>rd</sup> September 1847. Ford of the Arkansas River, wet bottom-land.

15<sup>th</sup> May - 7<sup>th</sup> July 1847. Santa Fe Creek, near the water.

3<sup>rd</sup> June 1847. Santa Fe Creek, bottom land exposed to inundations.

14<sup>th</sup> August 1847. 12 miles West of Vegas, elevated rocky regions. Comonylexa agraria Kunth (Scirpus, Nardus, Arkansas Texas)

22<sup>nd</sup> August 1846. Council Grove, shady place underneath projecting ledges of rocks, fertile loose soil.

Comonylexa cundata n. sp.

28<sup>th</sup> July 1847. Santa Fe, Creek valley in the mountains.

46

14<sup>th</sup> August 1847. Between San Miguel and Vegas, open woodland. Flower white.

25<sup>th</sup> June - 28<sup>th</sup> July 1847. Santa Fe, foot of mountains near irrigating ditches.

14<sup>th</sup> - 25<sup>th</sup> August 1846. 30 miles West of Council Grove, low place.

14<sup>th</sup> - 25<sup>th</sup> August 1847. San Miguel - Mc Nees Creek, sandy hill-side.

Cyperus strigosus L. - Torrey

27<sup>th</sup> August 1846. 30 miles West of Council Grove, low place

25<sup>th</sup> July - 14<sup>th</sup> August 1847. Santa Fe to Vegas, woodland.

13<sup>th</sup> August 1846 & 3<sup>rd</sup> September 1847. Ford of the Arkansas River, wet bottom-land, and 30 miles West of Independence.

18<sup>th</sup> - 26<sup>th</sup> September 1847. Bluff Creek-bottom.

23<sup>rd</sup> August 1846. Council Grove, dry parts of the gravelly backbed.

27<sup>th</sup> May - 18<sup>th</sup> July 1847. Santa Fe, margin of a pond, wet soil.

21<sup>st</sup> May - 7<sup>th</sup> June 1847. Santa Fe, immersed in a pond.

3<sup>rd</sup> September 1847. Ford of the Arkansas River, wet bottom land.

3<sup>rd</sup> September 1847. Ford of the Arkansas River, low wet places near the river.

26<sup>th</sup> April - 24<sup>th</sup> June 1847. Santa Fe, margin of the Creek and of irrigating ditches.

15<sup>th</sup> May 1847. Santa Fe Creek valley, moist places.

16<sup>th</sup> June 1847. Santa Fe, margin of the Creek on the mountains.

21<sup>st</sup> May - 19<sup>th</sup> July 1847. Santa Fe, margin of the Creek.

31<sup>st</sup> May - 16<sup>th</sup> June 1847. Santa Fe, Creek bank.

16<sup>th</sup> June - 7<sup>th</sup> July 1847. Santa Fe, margin of irrigating ditches.

15<sup>th</sup> May - 24<sup>th</sup> June 1847. Santa Fe, Creek bank, near the water.

35. 1 3<sup>rd</sup> June 1847. Santa Fe, shady bank of the Creek, close to the water.

23<sup>rd</sup> August 1847. 7 miles East of Rock Creek.

21<sup>st</sup> May - 7<sup>th</sup> June 1847. Santa Fe, wet meadow near a pond.

3<sup>rd</sup> June 1847. Santa Fe, Creek valley, not far from the Creek.

20<sup>th</sup> May - 6<sup>th</sup> June 1847. Santa Fe, margin of irrigating ditches.

17<sup>th</sup> April 1847. Santa Fe Creek, moist places near the Creek.

26<sup>th</sup> April 1847. Santa Fe, foot of mountains, not far from irrigating ditches.

24<sup>th</sup> - 27<sup>th</sup> April 1847. Santa Fe, wet meadow near a pond.

24<sup>th</sup> May 1847. Rio del Norte, margin of the water on somewhat elevated banks, between rocks.

10<sup>th</sup> May - 2<sup>nd</sup> August 1847. Santa Fe, dry loose and level ground, also sandy soil and gently sloping ledges.

27<sup>th</sup> August 1847. Upper Spring (Cimarron Riv.), bank of the river.

19<sup>th</sup> July - 16<sup>th</sup> August 1847. Santa Fe - Moro Riv., rocky bluffs.

27<sup>th</sup> August 1847. Upper Spring (Cimarron Riv.), margin of the water.

27<sup>th</sup> August 1847. Upper Spring (Cimarron Riv.), margin of the water.

19<sup>th</sup> June - 10<sup>th</sup> August 1847. Santa Fe, elevated place of the Creek bottom; also near the irrigating ditches of fields. *ipsacum Dactyloides*

19<sup>th</sup> August 1847. Council Grove, bottom land.

3<sup>rd</sup> 19<sup>th</sup> July 1847. Santa Fe, margin of irrigating ditches at the foot of mountains.

22<sup>nd</sup> June - 8<sup>th</sup> August 1847. Santa Fe, Creek-bottom.

20<sup>th</sup> May - 18<sup>th</sup> July 1847. Santa Fe, dry valleys at the foot of hills loose soil.

31<sup>st</sup> July 1847. Santa Fe, Creek valley.

15<sup>th</sup> July 1847. Santa Fe, Creek valley, foot of hills.

19<sup>th</sup> - 31<sup>st</sup> July 1847. Santa Fe Creek-bottom.

6. *Elymus canadensis*  
21<sup>st</sup> September, 1847. Bottom land of Kansas River.

8<sup>th</sup> 15<sup>th</sup> July 1847. Santa Fe, Creek valley near irrigating ditches.

22<sup>nd</sup> June - 7<sup>th</sup> July 1847. Santa Fe, Creek valley, shady bank of the Creek.

24<sup>th</sup> June - 28<sup>th</sup> July 1847. Santa Fe, foot of mountains.

7<sup>th</sup> - 12<sup>th</sup> July 1847. Santa Fe, side of mountains.

12<sup>th</sup> - 26<sup>th</sup> July 1847. Santa Fe.

16<sup>th</sup> June - 26<sup>th</sup> July 1847. Santa Fe, protected by shrubs, at the foot of hills near fields.

28<sup>th</sup> August 1847. Between the Ford of Cimarron Riv. and Willow Bar, deep sandy somewhat moist soil.

28<sup>th</sup> August 1847. A few miles West of the ford of Cimarron Riv., high sandy prairie.

6<sup>th</sup> June - 31<sup>st</sup> July 1847. Santa Fe, Creek valley, foot of mountains.

16<sup>th</sup> - 22<sup>nd</sup> June 1847. Santa Fe Creek valley.

3<sup>rd</sup> 16<sup>th</sup> June 1847. Santa Fe, margin of the Creek in the mountains.

3<sup>rd</sup> June - 15<sup>th</sup> July 1847. Santa Fe, etc.

27<sup>th</sup> May - 12<sup>th</sup> July 1847. Santa Fe, wet meadow.

27<sup>th</sup> May - 15<sup>th</sup> July 1847. Santa Fe, low wet meadow.

22<sup>nd</sup> April - 16<sup>th</sup> June 1847. Santa Fe Creek valley, side of mountains between rocks, also foot of mountains and steep rocky banks.

7<sup>th</sup> June 1847. Santa Fe, margin of the creek.

18<sup>th</sup> September 1847. Bluff Creek-bottom.

17<sup>th</sup> - 20<sup>th</sup> August 1847. Ocate Creek to Mero River, elevated rocky places.

*Coa reptans*

23<sup>rd</sup> August - 26<sup>th</sup> September 1847. Council Grove, gravelly part of the Creek-bed; also blossoms

10<sup>th</sup> - 13<sup>th</sup> August 1847. A few miles East of Santa Fe to neighbourhood of Ojo de Bernal; woodland.

25<sup>th</sup> May - 26<sup>th</sup> July 1847. Rio del Norte, steep bank between rocks, also Santa Fe, waste garden land.

7<sup>th</sup> June - 25<sup>th</sup> July 1847. Santa Fe, along the mud-walls of fields.

31<sup>st</sup> May - 7<sup>th</sup> June 1847. Sarita Fe Creek, grassy somewhat elevated parts of its bottom in land.

26<sup>th</sup> July - 23<sup>rd</sup> August 1847. Santa Fe, Rock Creek, dry prairie.

16<sup>th</sup> June - 1<sup>st</sup> July 1847. Santa Fe Creek, foot of hills.

15<sup>th</sup> May 1847. Santa Fe Creek.

30<sup>th</sup> April - 24<sup>th</sup> June 1847. Sunny bank of Santa Fe Creek.

9<sup>th</sup> June - 29<sup>th</sup> July 1847. Santa Fe Creek valley, wet soil near a spring.

1<sup>st</sup> June - 28<sup>th</sup> August 1847. Rio del Norte, low sandy bank; Santa Fe, flat sandy places in the ford of Cimarron Riv.; also between Bent's Fort & Santa Fe.

17<sup>th</sup> May - 19<sup>th</sup> July 1847. Dry sandy plains between Santa Fe and the Rio del Norte; also Santa Fe, foot of hills near fields.

3<sup>rd</sup> - 31<sup>st</sup> July 1847. Santa Fe Creek valley, foot of hills near fields.

13<sup>th</sup> - 23<sup>rd</sup> August 1847. Ojo de Bernal, Mero Riv. and Rock Creek.

2<sup>nd</sup> August - 1<sup>st</sup> September 1847. Santa Fe to Little Arkansas Riv., from which region East it is only found occasional small isolated patches along the road as far as Council Grove.

13<sup>th</sup> August 1847. Near Ojo de Bernal.

27<sup>th</sup> June - 27<sup>th</sup> August 1847. Santa Fe, Mero Riv. to Council Grove.

14<sup>th</sup> August 1847. A few miles West of Hickory point, low wet bottom.

18<sup>th</sup> September 1847. Bluff Creek bottom.

24<sup>th</sup> September 1847. 8 miles South of Fort Leavenworth, along the roadside.

24<sup>th</sup> May - 28<sup>th</sup> August 1847. Rio del Norte, slopes of somewhat elevated banks, also a few miles West of the ford of Cimarron Riv., prairie.

28<sup>th</sup> August 1847. A few miles West of the Ford of Cimarron Riv., low prairies.

6<sup>th</sup> July 1847. Santa Fe Creek valley up in the mountains.

3<sup>rd</sup> July 1847. Santa Fe Creek valley not far from the creek.

3<sup>rd</sup> June - 19<sup>th</sup> October 1846 - 34<sup>th</sup>. Santa Fe Creek valley, gently sloping declivities, rather dry soil.

6<sup>th</sup> June - 13<sup>th</sup> July 1847. Santa Fe, margin of the Creek.

9<sup>th</sup> June - 10<sup>th</sup> August 1847. Santa Fe, foot of dry hills, somewhat sandy soil.

8<sup>th</sup> September 1847. Pawnee Fork Creek bottom, shady places.

26<sup>th</sup> - 28<sup>th</sup> July 1847. Santa Fe, Creek valley near fields.

1<sup>st</sup> July 1847. Santa Fe, margin of the creek.

24<sup>th</sup> September 1847. Near Fort Leavenworth.

3<sup>rd</sup> October 1846. Bottom-prairie and banks of Poni Creek, fertile soil.

16<sup>th</sup> August 1847. Mero River, hillsides between rocks.

22<sup>nd</sup> September 1847. 6 miles N.E. of the upper-ferry of Kansas Riv.

13<sup>th</sup> - August 10<sup>th</sup> - October 1846. 41. Ojo de Bernal & Rock Creek, elevated prairie, in spots where the soil is loose and fertile, also between Bermejo and Colonia do Rio, in similar localities.

1<sup>st</sup> June - 1<sup>st</sup> October 1846 - 41. Santa Fe, Vegas, and Colorado Riv.; prairie valleys, good soil.

24<sup>th</sup> June - 15<sup>th</sup> July 1847. Santa Fe, Creek valley near an irrigating ditch.

15<sup>th</sup> - July 1847. Santa Fe, not far from the creek, at the foot of mountains.

1 22<sup>d</sup> June - 28<sup>th</sup> July 1847. Santa Fe, margin of the creek.

1 30<sup>th</sup> May - 6<sup>th</sup> August 1847. Santa Fe, dry hill-sides, gravelly soil.

1 13<sup>th</sup> August 1847. near Ojo de Bernal.

1 8<sup>th</sup> September 1847. Pawnee Fork Creek bottom.

1 24<sup>th</sup> May 1847. Rio del Norte, sides of somewhat elevated banks fronting the water, between rocks.

1 1<sup>st</sup> Septbr. 1847. Prairie at Sand Creek.

1 14<sup>th</sup> August 1847. Between San Miguel & Vegas

1 19<sup>th</sup> May - 13<sup>th</sup> July 1847. Rio del Norte and Santa Fe, sunny hill-sides, between rocks.

1 17<sup>th</sup> May - 6<sup>th</sup> August 1847. Rio del Norte, sandy elevated places of the river bank, at some distance from the water; also Santa Fe, foot of hills, dry loose sandy soil, under protection of shrubs.

1 16<sup>th</sup> June - 10<sup>th</sup> August 1847. Santa Fe, foot of dry hills.

1 30<sup>th</sup> May - 13<sup>th</sup> August 1847. Santa Fe, dry gravelly valley; also neighbourhood of Ojo de Bernal.

1 17<sup>th</sup> August 1847. 2 miles East of Mora River, foot of high rocks.

1 17<sup>th</sup> - 31<sup>st</sup> July 1847. Santa Fe, waste fields; Rio del Norte, low sandy river bank.

1 29<sup>th</sup> August 1847. Between Willow-Bar and Middle Spring (Cimarron Riv.).

1 15<sup>th</sup> May - 3<sup>rd</sup> June 1847. Santa Fe Creek, bottom land at no great distance from the creek.

1 19<sup>th</sup> July 1847. Santa Fe, grassy margin of an irrigating ditch.

1 12<sup>th</sup> August - 8<sup>th</sup> September 1847. Pawnee Fork & Pecos, prairies.

1 16<sup>th</sup> July - 3<sup>rd</sup> Septbr. 1847. Santa Fe, creek-valley near fields; - Willow-Bar, sandy wet bottomland; - Ford of Arkansas Riv., wet bottom land; - Pawnee Fork, creek-bottom.

1 27<sup>th</sup> August 1847. Upper Spring (Cimarron Riv.) margin of the water.

1 21<sup>st</sup> Septbr. 1847. Prairie about 10 miles South West of the upper ferry of Kansas Riv.

1 27<sup>th</sup> September 1847. Bank of Missouri Riv. above Washington.

1 12<sup>th</sup> August 1847. 10 miles East of Pecos, low prairie.

1 24<sup>th</sup> July 1847. Santa Fe Creek, not far from the creek.

1 16<sup>th</sup> August 1847. Mora Riv., hill side between rocks.

1 17<sup>th</sup> August 1847. Creek-bottom near Council Grove. 1000 ft.

1 26<sup>th</sup> July - 8<sup>th</sup> September 1847. Santa Fe, creek-bottom; - Ojo de Bernal, margin of a pond; - Ford of the Arkansas Riv., wet bottom land; - Pawnee Fork, creek-bottom.

1 12<sup>th</sup> August 1847. 10 miles East of Pecos. 1000 ft.

1 26<sup>th</sup> August 1847. A few miles Ws of the ford of Cimarron Riv.

1 12<sup>th</sup> August 1847. Ojo de Bernal, low grassy places in the mountains.

1 33<sup>rd</sup> - 24<sup>th</sup> June 1847. Santa Fe Creek, margin of the creek.

1 13<sup>th</sup> - 16<sup>th</sup> August 1847. Ojo de Bernal - Mora Riv., summit of a rocky hill.

1 15<sup>th</sup> May - 12<sup>th</sup> July 1847. Santa Fe, margin of the creek. *Leersia virginica*

1 24<sup>th</sup> September 1847. 8 miles South of Fort Leavenworth, in ravines along the road side.

1 17<sup>th</sup> August 1847. A few miles East of Mora Riv., deep standing water. *Myriophyllum sibiricum* = 1000 ft.

1 14<sup>th</sup> August 1847. About 90 miles West of Independence under water in a deep large pool.

1 18<sup>th</sup> September 1847. Sluff-creek bottom, submerged in the water of a shallow pool. *Lamna triplana*? *L. minor*?

2 species. 17<sup>th</sup> August 1847. A few miles East of Mora Riv., surface

of deep standing water.

29<sup>th</sup> April 1847. Santa Fe, in a pond-like collection of water fed by a small spring.

### Equisetaceæ.

1/15 *Equisetum arvense*

22<sup>nd</sup> April - 22<sup>nd</sup> June 1847. Santa Fe creek-bottom, near the creek and irrigating ditches, also Rio del Norte, low bank, margin of the water.

E. *humile* ?

8<sup>th</sup> - 22<sup>nd</sup> May 1847. Rio del Norte, low wet sandy bank of the river.

E. *laevigatum* A. Brum  
22<sup>nd</sup> June 1847. Santa Fe, foot of hills near the creek.

E. *robustum* A. Brum  
var.

4<sup>th</sup> March - 2<sup>nd</sup> May Sunny bank of Santa Fe creek.

### Filices.

*Botrychium lunaria* ?  
only one small specimen seen.  
3<sup>rd</sup> June 1847. Santa Fe creek valley, grassy place.

12<sup>th</sup> April - 11<sup>th</sup> November 1846-7  
Santa Fe, shady sides of mountains, near the foot as well as on the summit. In good soil under protection of rocks and roots, in crevices. Early in the spring, the leaves show a tendency to roll up as soon as the plant is taken from the ground. Still green throughout the winter.

23<sup>rd</sup> February 1847. Eastern mountains, Santa Fe, sunny declivities in crevices of steep masses of rocks.

8<sup>th</sup> - 25<sup>th</sup> May 1847. Rio del Norte, deep ravines in the trap-formation, ~~the~~ with flexuous, narrow stems.

22<sup>nd</sup> August 1846. Council Grove underneath projecting ledges of rocks, high dry region. rocks bright, pine spines

*Eleocharis atropurpurea*

20<sup>th</sup> August 1846. Council Grove summit of a hill, deep crevices in the rocks.

28<sup>th</sup> July 1847. Santa Fe Creek 12 miles above Santa Fe, high mountains, shady places in ravines.

Asplenium *magnum* ?

5<sup>th</sup> June 1847. Santa Fe Creek bottom, near the creek.

21<sup>st</sup> August 1847. Council Grove ravine, between rocks, in a ravine.

15<sup>th</sup> May - 24<sup>th</sup> June 1847. Santa Fe creek-bottom, shady places at the foot of rocks, damp moist fertile soil.

16.3

30<sup>th</sup> March - 17<sup>th</sup> August 1847. Santa Fe Creek, shady bank, between rocks, good soil. Also 2 miles East of Santa Fe. Green throughout the winter.

### Lycopodiaceæ.

Lycopodiæ

1/16

13<sup>th</sup> February - 17<sup>th</sup> April 1847. Santa Fe Creek, perpendicular sides of rocks facing the creek, in the higher regions of the mountain range as well as on the shady bank of the lower creek. Begins to be lively green in the month of March.

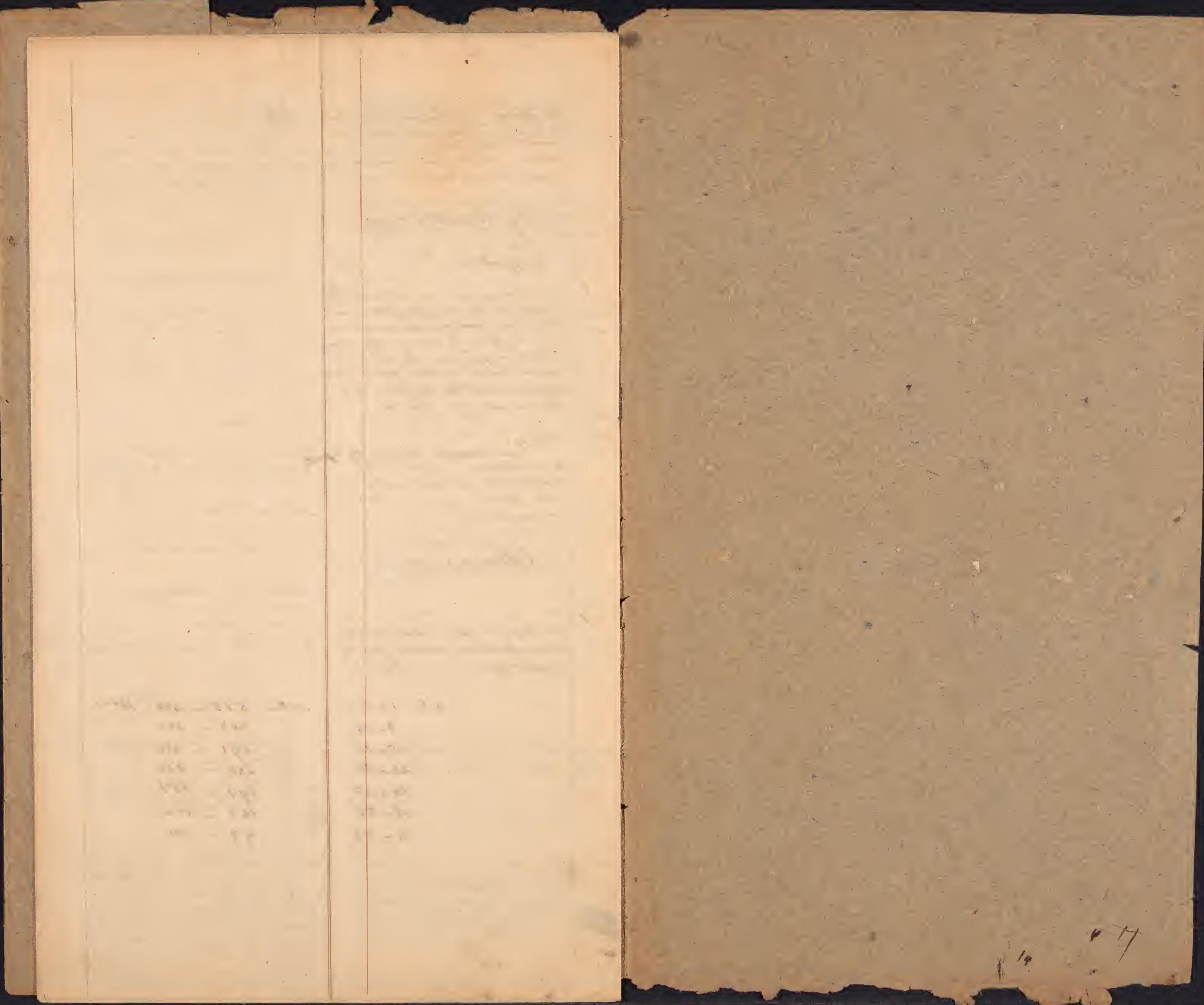
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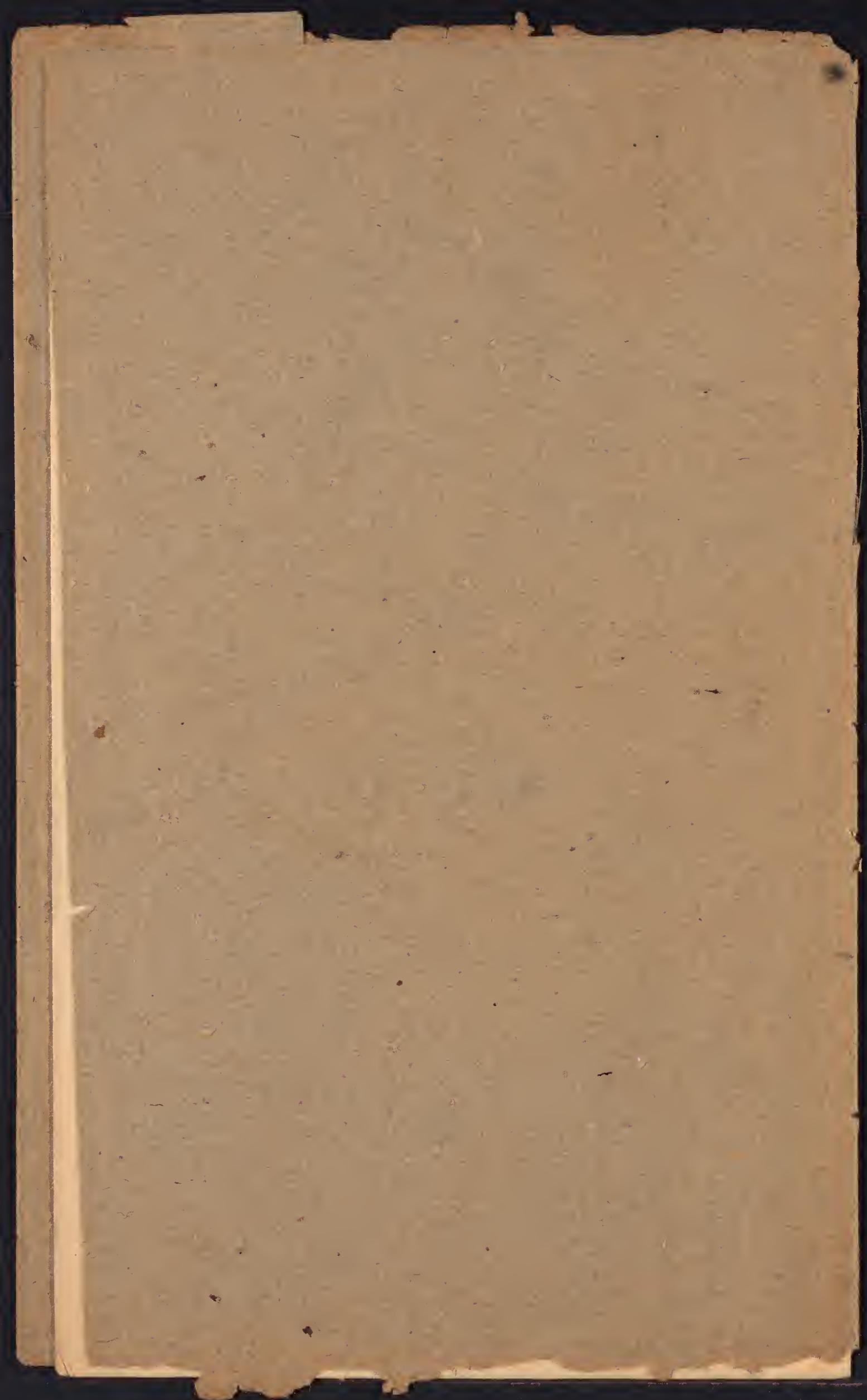
near Alpine but apparently different.  
6<sup>th</sup> February - April 1847. Santa Fe, between rocks in the upper region of the mountains.

### Characeæ.

29<sup>th</sup> April 1847. Santa Fe, in a shallow pond fed by a spring.

sets 1-6	outer	513 - 400	1170
7-14		387 - 300	
15-20		291 - 250	
21-28		246 - 200	
29-37		191 - 151	
38-53		147 - 100	
54-73		97 - 50	







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